

A NEW SPECIES OF *CHLOSYNE* (NYMPHALIDÆ) FROM WESTERN MEXICO

by DAVID L. BAUER

Mexico is particularly rich in species of the genus *Chlosyne*, and this previously undescribed insect is a large, beautiful black-and-white species. A number of other *Chlosyne* with black-and-white upper surfaces of the wings have been named. They are: *C. melanarge* Bates of the *definita-erodyle* group; *C. hyperia* Fabricius and *hippodrome* Geyer which form their own group; *C. marianna* Röber of the *janais* group; and *C. adelina* Staudinger, *quehtala* Reakirt, *crocale* Edwards, and *nigrescens* Cockerell all belong to the *C. lacinia* group. In addition there is a black-and-white member of the *rosita* Hall group, which is being described in another paper (Bauer, in press). The new species differs significantly from all of the above entities. First the male and female genitalia were examined and found to be of the *C. janais* Drury type, Fig. 2. The genitalic structure separates it from all the above except *C. marianna*. It differs from *marianna* on the upper surface of the wings in the number and size of the white spots, and on the under surface in the maculation which shows considerably more yellow on the secondaries. After comparison with series of the above-named insects in the F. M. Brown, Oxford University Museum, and my own collections, and checking the literature, original descriptions, figures, and keys to the genus, I take pleasure in naming this insect —

Chlosyne gloriosa Bauer, NEW SPECIES

MALE. Primaries produced between veins M_1 and M_2 , also at end of vein Cu_2 , causing an elongate angular look. Upper surface of primaries: blue-black with a prominent series of large white median spots beginning at costa and ending at vein M_3 ; these four white spots stand out boldly. The postmedian series is represented by small white dots, usually obsolete from vein M_3 to costa and becoming obsolete toward the inner margin. There is also a dash of white in the cell at its base, and two small white dots in the cell along its costal edge. The under surface of the primaries is charcoal black. All the white spots of the upper surface are repeated and larger. The postmedian series is complete. In addition there is a white spot in the cell near where veins M_3 and Cu_1 branch, and also a white dot between veins Cu_2 and $2A$ in the postbasal area. There are three pale yellow submarginal spots from veins M_2 to Cu_2 , and a dash of the same color at the base of the costa.

Upper surface of the secondaries: solid blue-black in color, and the edge of wing is scalloped between the ends of the veins. The scalloped effect is augmented by a row of white scales adjacent to the white fringe as in *hyperia*. Under surface of the secondaries is colored as follows. The base of the costa is yellow; next, a basal black band from costa to inner margin; followed by a postbasal yellow stripe, which begins on the costa but does not reach the in-

ner margin. Next, a broad submedian black band extending from costa to inner margin and containing a narrow linear yellow spot near the costa and another wider one in the cell. Following this an irregular narrow yellow band from costa to inner margin, but interrupted before it reaches the inner margin, and along its outer edge there is a series of jet black spots which partially invade it, and are partially in the wide charcoal-black median band. This wide charcoal-black median area also includes the postmedian area and along its inner edge there is a series of five irregularly sized mahogany-red spots extending from vein M_1 to 2A. The mahogany-red spot nearest the inner margin is the largest. In this same broad median dark area there is a series of postmedian white spots extending from the costa to the inner margin. Along the outer edge of this broad median dark area is a series of large yellow submarginal spots followed by a narrow scalloped black line. Between the ends of the veins at the base of the white fringe are one or two rows of pale yellow scales much as in *hyperia*. The inner margin is narrowly edged with yellow and vein 3A is scaled with yellow.

Fringes: snow-white broken by black only at the ends of the veins.

Palpi: black with white on the sides.

Antennæ: black flecked with white and with a dash of white on the club.

Head: black with a dot of white between the eyes and white edging around the eyes.

Thorax: black above, clothed with some white hairs beneath.

Abdomen: black above, three longitudinal pale yellow lines ventrally.

Legs: forelegs white tinged with rufous; remaining two pairs deep orange.

Female: almost identical to male holotype. The above description will serve for both, except that the primaries are slightly more angular.

HOLOTYPE male: Tepic, Nayarit, Mexico; August 16, 1954; leg. DAVID L. BAUER. Expanse of forewings 50 mm.; length of forewing base to apex 26 mm.; length of hindwing base to outer margin 18.5 mm.

ALLOTYPE female: Tepic, Nayarit, Mexico; August 16, 1954; leg. DAVID L. BAUER. Expanse of forewings 61.5 mm.; length of forewing base to apex 32 mm.; length of hindwing base to outer margin 23.5 mm.

PARATYPES: 13 males and 6 females all collected at Tepic, Nayarit, Mexico; August 16, 1954; leg. DAVID L. BAUER.

The holotype and allotype are deposited in the Peabody Museum of Natural History, Yale University. One paratype is deposited at the Instituto de Biología, Mexico City, Mexico, one paratype at the American Museum of Natural History, New York, N. Y., and one paratype in the Kent Wilson collection. The rest of the paratypes will remain in the author's collection.

The type series is remarkably constant in pattern on the upper surface of the wings. On the under surface the pattern is somewhat variable in the number of submarginal spots on the primaries, and in the amount of yellow in the submedian maculation on the secondaries.

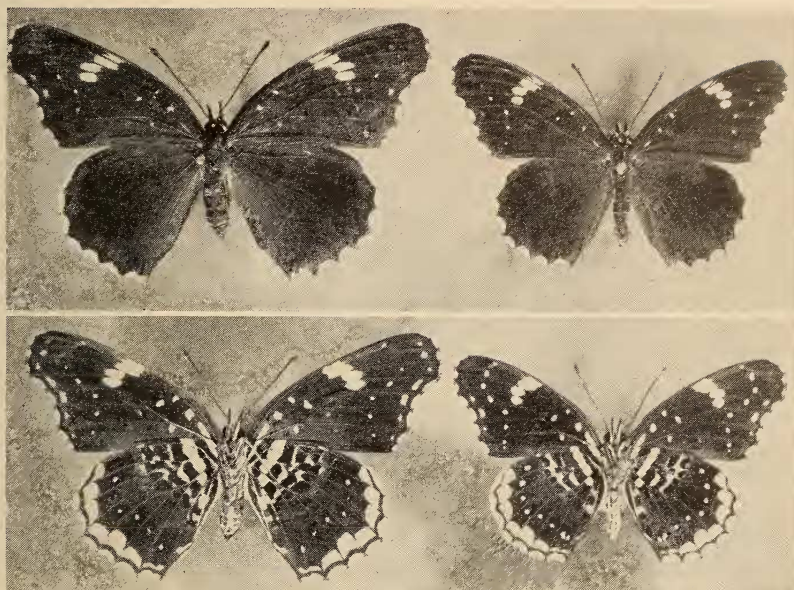


Fig. 1. *Chlosyne gloriosa*: Allotype ♀ left, Holotype ♂ right; upperside above, underside below.

DISCUSSION

The named members of the *C. janais* group are now:

<i>Chlosyne janais</i> Drury	<i>Chlosyne marianna marianna</i> Röber
<i>Chlosyne gloriosa</i> Bauer	<i>Chlosyne marianna irrubescens</i> Hall.

Chlosyne janais is the best known member of the group. It also has the most extensive distribution, being found from southern Texas and Sinaloa, Mexico, southward to Panama. Its large size, black white-spotted primaries, and characteristic bright orange-red discal patch on the secondaries, distinguish it from the other members of the group, but not from similarly maculated forms of *C. lacinia* and *C. rosita*. HOLLAND (1931) on plate XVIII: fig. 10 figured a specimen of *C. lacinia* not *janais*. *C. janais* can be separated by the absence of the orange-red spot at the anal angle on the under surface of the secondaries, which is so persistent in the *C. lacinia* group. It can be separated from all members of the *C. rosita* group by the presence of the submarginal spots on the underside, which are always absent in the *C. rosita* group.

Chlosyne marianna marianna is entirely dull black, spotted with white, on its upper surface. It has been persistently confused with *C. hyperia*, with which it flies. It differs from *hyperia* in the duller black of the upper surface, smaller but more profuse white spots on the upper surface particularly at the base of the primaries, and on the under surface of the secondaries, where five reddish postmedian spots are the rule and not six as in *hyperia*. *C. m. marianna* is found primarily in the Rio de las Balsas basin south and west of Mexico City; however, it may prove to have a much wider distribution when more

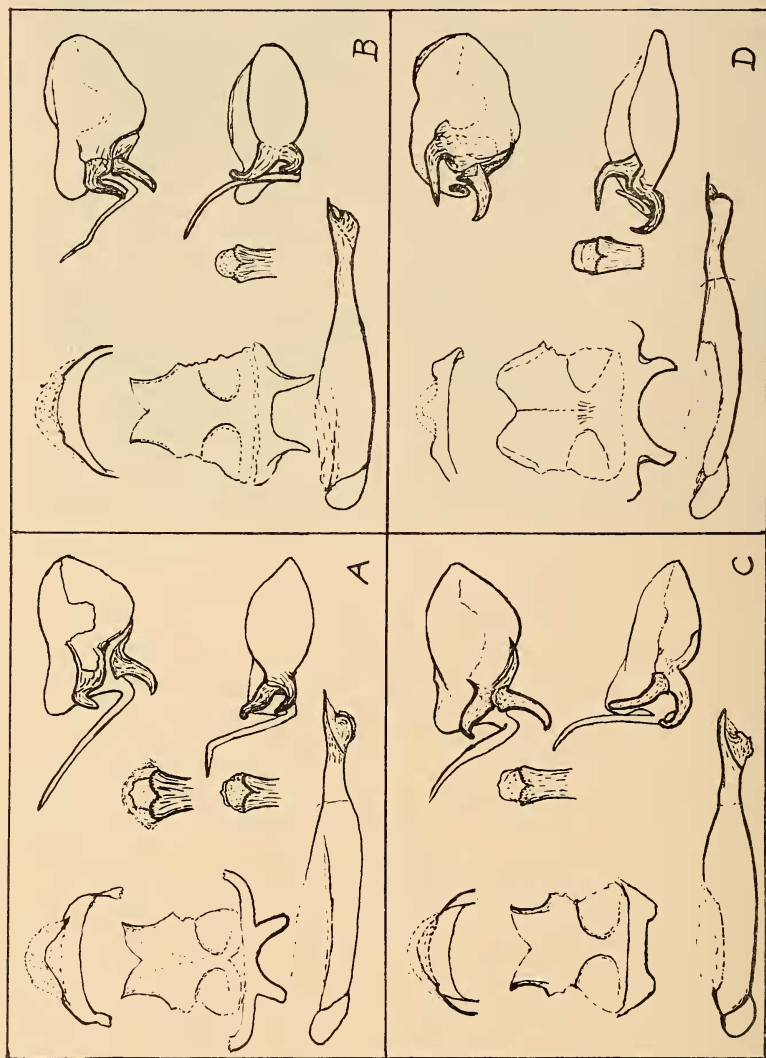


Fig. 2. Genitalia of *Chlosyne*: A) *C. janalis* (El Salto, S.L.P., Mexico, July 1954, leg. D. L. Bauer; B) *C. gloriosa* (Tepic, Nay., Mexico, Aug. 1954, leg. D. L. Bauer); C) *C. marianna* (Mexcala, Guer., Mexico, el.2000', 29 July 1956, leg. Kent Wilson); D) *C. hyperia* (Ojo de Agua, el.1600', V.C., Mexico, 12 May 1941, leg. J. & R. Potts). Claspers at right; tegumen, etc. left; aedeagus bottom.

extensive collecting is done. It differs from similarly colored members of the *C. lacinia* and *rosita* groups by the same characters as does *C. janais*. It is not a subspecies of *janais*, because it flies with it in several localities.

Chlosyne marianna irrubescens Hall (1917) is a little-known form or subspecies. FORBES (1928) omitted it from his key because of inadequate description and no material seen. It was described from Cuautla, Morelos, Mexico. The most pertinent part of HALL's description is "similar to *C. hyperia* var. *marianna* Röber, but the hind wings above with a large round spot of mahogany-red in the middle of the wing." In other words take a typical *marianna*, add a mahogany-red spot in the center of the secondaries, and you have *irrubescens*. I have specimens of just such an insect before me. It can be separated from similarly maculated specimens of *lacinia* and *rosita* (and there are such specimens) by the same characters as those by which *janais* and *marianna* are distinguished from them. In the state of Guerrero, Mexico, occasional specimens taken with typical *marianna* have small spots of mahogany-red on the secondaries, and the two seem to inter-grade in the region. There is no approach to *janais* with its clear-cut orange red patch, for the mahogany-red of *irrubescens* merges gradually with the black ground.

Chlosyne gloriosa differs from *marianna* in the more angular shape of the fore wing, the deep blue-black color, and the much larger median white spots on the primaries. All the other white spots tend to be reduced in size or to be obsolete. It can be separated from *C. hyperia*, with which it flies, by the number of reddish spots on the under surface of the secondaries (see *marianna* above), and the extensive yellow maculation in the basal area of the same. It differs from *lacinia* and *rosita* in the same way as do *janais* and *marianna*. The type locality is the only one from which it is known so far. It was abundant just north of Tepic, where specimens were first sighted sipping moisture from the highway and along the edges in company with *C. hyperia*, *C. eumeda*, and *lacinia* forms. The day was cloudy and we soon went looking for better weather, not realizing that we had left many specimens of a new species.

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Apt. 5, Garland Apts., College Sta., Berrien Springs, Mich., U. S. A.